An Introduction to

Theory and Reasoning in Nursing

Fourth Edition

Betty M. Johnson • Pamela B. Webber

Wolters Kluwer Health | Lippincott Williams & Wilkins

An Introduction to

Theory and Reasoning in Nursing

Fourth Edition

Betty M. Johnson, PhD
Professor Emeritus and Former Chair
Department of Nursing
The University of Virginia's College at Wise
Wise, Virginia

Pamela B. Webber, PhD, APRN, BC, FNP
Professor
Division of Nursing
Shenandoah University
Winchester, Virginia

Wolters Kluwer Health | Lippincott Williams & Wilkins

Philadelphia • Baltimore • New York • London
Buenos Aires • Hong Kong • Sydney • Tokyo

Acquisitions Editor: Christina Burns
Product Development Editor: Maria McAvey
Editorial Assistant: Dan Reilly
Production Project Manager: Cynthia Rudy
Design Coordinator: Joan Wendt
Creative Services Director: Doug Smock
Manufacturing Coordinator: Karin Duffield
Prepress Vendor: S4Carlisle Publishing Services

Fourth Edition

9 8 7 6 5 4 3 2 1

Printed in China

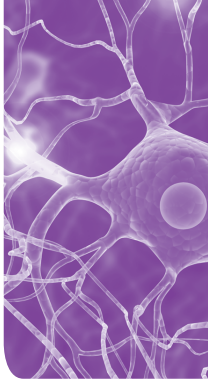
Library of Congress Cataloging-in-Publication Data

Johnson, Betty M., author.
An introduction to theory and reasoning in nursing / Betty M. Johnson and Pamela B. Webber. — Fourth edition.
p. ; cm.
Includes bibliographical references and index.
ISBN 978-1-4511-9035-9 (alk. paper)
I. Webber, Pamela Bayliss, author. II. Title.
[DNLM: 1. Nursing Theory. 2. Philosophy, Nursing. WY 86]
RT84.5
610.73'01—dc23

2013030734

One might think that by the time a book reaches a successful fourth edition that the writing gets easier and requires less time. It doesn't. If anything, the amount of intellectual energy needed and the time commitment increases and makes busy lives even busier. Consequently, this work simply could not have been completed without the ongoing and loving support of our families and their willingness to commit their time and energy to support us. Therefore, we once again dedicate this work to:

Jeff Webber
Michael Webber
Sarah Webber Lane
Cindy Webber
Jace Michael Lane
Albin Campbell Lane
Debra and Eric Nelson
Jon and Diana Johnson
and Tim, Jessica, Aren, Ryne, Kelsey, Karl, and Kyle



Contributors

Barbara E. Chandler, PhD, OTR/L, FAOTA
Associate Professor
Division of Occupational Therapy
Shenandoah University
Winchester, Virginia

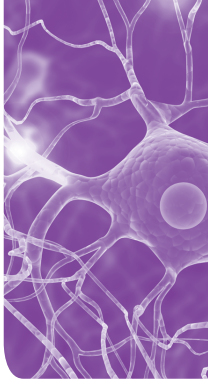
Sean Clarke, RN, PhD, FAAN
Professor, Susan E. French Chair, and Director, McGill Nursing Collaborative
Ingram School of Nursing
McGill University
Montreal, Quebec

Elizabeth Courts, DNP, FNP-BC
Assistant Professor
School of Nursing
Shenandoah University
Winchester, Virginia

Karen F. Kellison, EdD Educational Psychology
Associate Dean
Instructional Technology and Distance Learning
Lord Fairfax Community College
Middletown, Virginia

Christine P. Newby, MSN, RN, CNE
Assistant Professor
Shenandoah University
School of Nursing
Winchester, Virginia

Caren Wirlinger, BSPT
Physical Therapist
Veterans Affairs
Martinsburg, West Virginia



Reviewers

Linda Austin, MSN/PhD in progress
Assistant Professor
Nursing/Online Department
University of North Alabama
Florence, Alabama

Mary Cordeau, PhD
Assistant Professor
Department of Nursing
Quinnipiac University
Hamden, Connecticut

Joyce Engel, PhD
Associate Professor
Brock University
St. Catharines, Ontario

Karen Gutierrez, PhD, MSN
Assistant Professor
Department of Nursing
Metropolitan State University
St. Paul, Minnesota

Nkechi Ileka, MSN
Adjunct Professor
Department of Nursing
Washington Adventist University & Bowie State University
Takoma Park and Bowie, Maryland

Rebecca Otten, EdD
Assistant Professor
School of Nursing
California State University, Fullerton
Fullerton, California

Dana Manley, PhD
Assistant Professor
Department of Nursing
Murray State University
Murray, Kentucky

Wesley Massley, MSN Nursing Education
Assistant Professor
University of Charleston
Charleston, West Virginia

Marilyn Masterson, PhD
Assistant Professor
Washburn University
School of Nursing
Topeka, Kansas

Joyce Miller, DNP, RN
Assistant Professor
Department of Nursing
Augsburg College
Minneapolis, Minnesota

Barbara Norwood, MSN, EdD
Professor
Department of Nursing
University of Tennessee at Chattanooga
Chattanooga, Tennessee

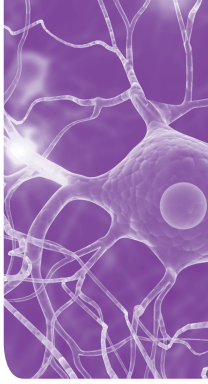
Phyllis Skorga, PhD
Professor
College of Nursing and Health Professions
Arkansas State University
State University, Arkansas

Peggy Ward-Smith, PhD
Associate Professor
Department of Nursing
University of Missouri Kansas City
Kansas City, Missouri

Becky Thiel, DNP
Professor
Department of Nursing
Shawnee State University
Portsmouth, Ohio

Lisa Torok, MSN, PhD
Department Chair
Department of Nursing
Thomas More College
Crestview Hills, Kentucky

Jeanne Tucker, PhD, RN, MSN, HSAD, CHES
Assistant Professor of Nursing
Traditional, Online, and Graduate Nursing
Patty Hanks Shelton School of Nursing
St. Abilene, Texas



Foreword

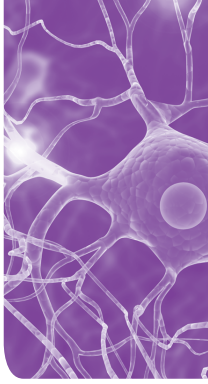
Consciously or unconsciously, nurses use theory, reasoning, and evidence every day. Theories provide frameworks for the phenomena that nurses observe while caring for patients, families, and communities. Theories guide nurses toward the identification of key concepts, ideas, values, beliefs, meanings, and intentions that must be considered for thorough assessment, planning, implementation, evaluation, and effectiveness. *An Introduction to Theory and Reasoning in Nursing* clearly defines terms and provides opportunities for application from the work of Florence Nightingale to the theorists of the 21st century. Clinical reasoning, with theoretical underpinnings, guides nurses in making sense across clinical settings. This book fills a major gap in the literature by presenting a detailed discussion of the relationship between theory, research, and reasoning in nursing. This edition emphasizes information needed across the novice-to-expert continuum.

The fourth edition of *An Introduction to Theory and Reasoning in Nursing* is best read in sequence, although each chapter can stand alone. Students will be able to explore and appreciate nursing theories and their use in nursing practice. Educators will find that the book assists students in their comprehension of the connection between theory and clinical reasoning. Faculty will be able to more effectively frame and ground their teaching/learning methods, their scholarship, and their practice in nursing theory.

Summaries of each theorist are supported with notations related to key concepts or variables. The criterion-based evaluation model is extremely useful for evaluation of theories and research efforts. Nursing stories provide examples of theory application. For some readers, a favorite theorist will emerge. For most, a goodness of fit with a theory or theorist will be guided by the questions and passions of the time, place, culture, population, societal trends, and worldview.

The thoughtful sharing and deep understanding of Drs. Johnson and Webber in this current edition of *An Introduction to Theory and Reasoning in Nursing* fill a significant gap in our literature. Their appreciation of the art and science of nursing is evident throughout the text. The interdisciplinary component illustrates the real work of practice. The authors support reflection and inquiry as they guide students toward making sense of their experiences, linking concepts, asking questions, comparing and contrasting, testing hypotheses, and generating evidence for best practice, safe passage, and optimal healthcare system design and delivery.

Julie Cowan Novak, DNSc, RN, CPNP, FAANP, FAAN
Professor and Vice Dean, Practice and Engagement
Joseph and Thelma Crow Endowed Professor
Executive Director, UT Nursing Clinical Enterprise, UTHSCSA
Student Health Center and Employee Health and Wellness Clinic
Professor, Department of Pediatrics, School of Medicine
Purdue University Professor Emeritus



Letter to the Students

Dear Nursing Students,

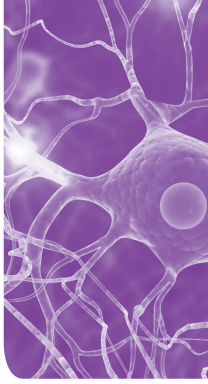
Welcome to the new paradigm for 21st-century theory, research, and reasoning in nursing! To paraphrase a line from the movie *The Wizard of Oz*, "You're not in Kansas anymore, Toto." But then again, neither is healthcare. If you are reading this text, it is because your teacher recognizes that the paradigm governing healthcare education and the teaching of nursing theory, research, and reasoning, is changing rapidly and dramatically out of necessity. Quite simply, the old way of taking an entire semester to teach students about individual nursing theories and treating research as separate from theory is not only dated, but has done little to improve the intellectual functioning of practicing nurses, as demonstrated by the last decade of reports from the *Institute of Medicine*.

Intellectually effective nurses in the 21st century must be grounded in current healthcare theory, be sophisticated consumers of healthcare research (meta-analyses and integrated reviews), and possess the reasoning ability to apply theory and research effectively in rapidly changing practice situations. It is not easy, but the step-by-step chapters in this text will help you. Read them, study them, and use them every day, and you will set the foundation to become a great nurse, not just an average one.

You may have noticed that this letter focuses on healthcare as opposed to nursing care. The reason for this is simple. Alone, nursing theory and research have not and cannot address the complexities of the 21st-century healthcare. To be effective in today's rapidly evolving healthcare system, you must be able to utilize and smoothly transition across diverse, multidisciplinary theory and research to help solve problems, answer questions, and explain phenomena occurring in practice. This is not hard to do if you can speak the fundamental language that unites all types of theory, research, and reasoning. *Introduction to Theory and Reasoning in Nursing* introduces you to this language and integrates it throughout each chapter. In addition, it has two chapters dedicated to the integration of support and interdisciplinary theory in nursing. Nursing does not operate in isolation—neither should its theory, research, or reasoning.

This text was written for nursing students and, in part, by nursing students. Dr. Johnson and I were simply the writers who put it all together. Students created many of the tables and figures and provided examples and stories to exemplify the information in the chapters. We are hoping some of you will do the same. Until then, read-study-learn and work hard at becoming the nurse we all call great.

Pam Webber



Letter to the Faculty

Dear Nursing Faculty,

Welcome to the new paradigm for 21st-century theory, research, and reasoning in nursing! To paraphrase a line from the movie *The Wizard of Oz*, "You're not in Kansas anymore, Toto." But then again, neither is healthcare. If you are using this text, it is because you recognize that the paradigm governing healthcare education and the teaching of nursing theory, research, and reasoning, is changing rapidly and dramatically out of necessity. Quite simply, the old way of taking an entire semester to teach students about individual nursing theories and treating research as separate from theory is not only dated, but has done little to improve the intellectual functioning of practicing nurses, as demonstrated by the last decade of reports from the *Institute of Medicine*.

Intellectually effective nurses in the 21st century must be grounded in current healthcare theory, be sophisticated consumers of healthcare research (meta-analyses and integrated reviews), and possess the reasoning ability to apply theory and research effectively in rapidly changing practice situations. It is not easy, but the progressively developed chapters in this text and the ancillary resources will help you and your students.

You may have noticed that this letter focuses on healthcare as opposed to nursing care. The reason for this is simple. Alone, nursing theory and research have not and cannot address the complexities of the 21st-century healthcare. To be effective in today's rapidly evolving healthcare system, students must be able to utilize and smoothly transition across diverse, multidisciplinary theory and research to help solve problems, answer questions, and explain phenomena occurring in practice. This is not hard to do if they can speak the fundamental language that unites all types of theory, research, and reasoning. Unfortunately, many nursing faculty came through graduate education programs that did not promote competency in understanding this fundamental language or promote skill in using the language as a tool for effective and strategic reasoning. If this is true for you, then I encourage you to spend additional time with Chapters 2 through 4. Once you have expertise in the language and its use, reasoning fluidly between theory, research, and practice will be apparent to your students.

This text also strives to redefine how nursing faculty and students see theory. The reality is that nurses use all types of theory when practicing effectively—they just use it through a nursing lens. Consequently, nursing education has an obligation to teach students how to read interdisciplinary theory, evaluate and understand its value, and apply it collaboratively, as opposed to just cooperatively, with our interdisciplinary partners. Nursing does not operate in isolation—neither should its theory, research, or reasoning. Chapters 5 and 11 provide specific insight into this

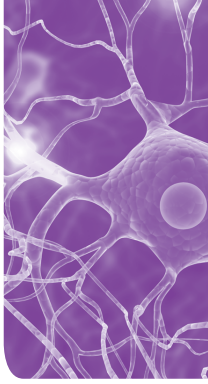
process. In addition, Chapter 7 demonstrates how many of nursing's relevant theories are built upon and/or integrate supportive and interdisciplinary theory.

This text was initiated over a decade ago because there were no primers available for basic content. At the time, it was a common assumption that everyone knew how to speak the language of theory, research, and reasoning and understood the complexities of their interrelationships. That assumption was wrong then and it is wrong now.

It is time to reconceptualize theory, research, and reasoning for effective nursing in the 21st century. This text is designed for this purpose. It has been developed and polished over time specifically for nursing students, both undergraduate and graduate, who need to learn the language and application of clinically relevant theory and research, through strategic reasoning. Students have told us what is important to the development of their understanding and we have listened. Nursing faculty have told us what is important to their ability to teach and facilitate the development of student competency in these areas and we have listened.

As I said at the beginning, "We're not in Kansas anymore, Toto," and it's a good thing.

Pam Webber



Preface

The Journey

Have you ever been traveling and gotten lost? If so, more than likely you used a map or global positioning system (GPS) to determine your location and find the most desirable route to your desired destination. The same approach can be used when learning something new like theory, research, and reasoning. Just as a map or GPS guides your trip, the progressively designed chapters in this text will guide the beginning of your journey toward nursing scholarship and expert practice. Studying theory, research, and reasoning is challenging intellectual work, but once you have this foundation in place you will be on the path toward expert practice and graduate nursing education.

Organization of the Text

Chapter 1 introduces you to some common activities you may encounter in everyday life that have a theoretical basis. For example, if you have ever ridden on a roller coaster, you will understand the discussion about the "theory of the thrill," and if you have ever been influenced to buy something in a shopping mall because of where it is placed in your line of sight, you will understand a significant component of marketing theory. These examples will provide you with some insight into how theory supports much of what you do in life and in nursing.

Chapter 2 introduces you to the unique language, meanings, structure, and interrelationships within theory, research, and reasoning. You will see how meanings of words are developed and expanded to provide meanings with greater application. You will also see how the meanings of these words interrelate in such a manner that they provide structure for theory, research, and reasoning in nursing practice.

Chapter 3 identifies components and processes associated with reasoning, and factors that influence reasoning, and demonstrates how they are used within nursing practice. In addition, it introduces you to how theory, knowledge, and research are applied in nursing through reasoning.

Chapter 4 is a new and exciting chapter—the first of its kind. This chapter introduces you to many technological tools and processes that support advanced reasoning in nursing theory, research, and practice. From alert fatigue, to data mining, to cognitive informatics and artificial intelligence, this chapter explores the symbiotic interaction between the human mind and the explosion of electronic tools.

Chapter 5 explores the roots of theory and knowledge development in nursing by exploring some of the universally accepted support theories from the arts, sciences, and humanities that helped establish the early basis of nursing theory and practice and continue to influence the development of nursing theory today.

Chapter 6 chronicles the emergence of nursing theory and includes significant contributions to the development of professional nursing, such as Florence Nightingale's; changes in nursing education and practice; legislative actions; and societal trends. As you become acquainted with these historical happenings, you will discover the impact they had on nursing's theoretical development.

Chapter 7 introduces you to many of the nursing theorists and theories that have influenced the development of nursing knowledge in the 20th and 21st centuries. You will learn about the theorists as individuals and how their theories have influenced nursing education, practice, and research.

Chapter 8 describes an easy method of evaluating theory using a criterion-based evaluation model. Using specific criteria to evaluate theory allows you to determine the usefulness of a particular theory to you and your practice. Theory is valuable only when you understand what it means and are able to apply it to practice.

Chapter 9 introduces you to the research process, significant philosophies that influence the conduct of research, and critical issues that influence research in nursing today. In addition, the criterion-based model presented in Chapter 8 is used to demonstrate how you can effectively evaluate research for inclusion into your practice.

Chapter 10 illustrates how practice and theory are connected through the use of observation, questioning, comparing, and contrasting. Recognizing and using a theoretical base enables you to find answers to questions, solve problems, and address phenomena in nursing practice, which will ultimately make you a more effective practitioner.

Chapter 11 is unique to this text in that it introduces you to multidisciplinary theory and how that theory is applied in nursing. A team of experts from nursing, medicine, occupational therapy, and physical therapy come together to introduce their theoretical base and essential reasoning processes in caring for an elderly Japanese man who has experienced a stroke.

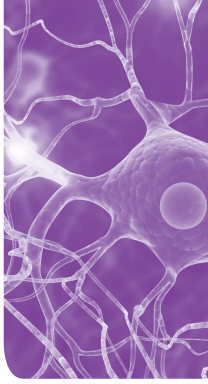
Chapter 12 discusses the continued development of nursing as a profession, a discipline, and a science, and projects effects that theory may have on this development.

Text Features

The text includes carefully designed features that enable you to "put the pieces together" and move from "Why do I have to study theory, research, and reasoning?" to "Theory, research, and reasoning are essential to my practice." Recurring features include:

- **Chapter Intent:** Chapter overviews help you focus on what you should learn and how it can be applied to practice.
- **Key Words/Concepts:** Lists of key words and concepts provide a ready reference for you. The terms first appear in boldface type to draw your attention to them and are defined as they are used. Many of these terms also appear in the glossary.

- **Chapter Outlines:** Chapter outlines give you the organization and arrangement of content and will help you locate specific sections for review.
- **Chapter Introductions:** Chapter introductions provide the background of the chapter content as well as the relationships it might have with theory, knowledge, research, reasoning, and practice.
- **Take-Home Messages**: New to the fourth edition! These take-home messages in purple boldface type help highlight the most significant information in each chapter.
- **Nursing Stories:** Special boxes highlight stories that illustrate the use of theory and reasoning. The stories will be helpful when analyzing theoretical concepts and their relationships to actual practice.
- **Boxes, Tables, and Displays:** Numerous boxes, tables, and displays summarize important information in an easy-to-understand format that will assist you to make more effective use of information as you proceed through the book.
- **Theorist Boxes:** Photos of theorists (when available) and a brief synopsis of their lives appear in special boxes in Chapter 7 to make these people and their theories come alive.
- **Summaries of Individual Support Theories and Nursing Theories:** Chapters 5 and 7 include summary boxes that identify phenomena, internal concepts or variables, propositions, external variables, assumptions, and, when relevant, facts, principles, and laws derived from theories used in nursing.
- **Chapter Summaries:** Chapter summaries provide brief comments about the content of the chapter and how it helps meet the goals of the book.
- **Learning Activities:** These exercises can be used in class or as preparation for class. They can also stimulate students and faculty to formulate questions and other activities that will assist in learning about theory, research, and reasoning and their application to nursing practice.
- **References:** A list of references used in each chapter enables you to expand your reading of specific topics.
- **Appendix Internet Guide:** Internet addresses help you become acquainted with theorists and their theories as well as what scholars are talking about related to the influence of theories in nursing education, practice, and research.
- **Glossary:** Includes definitions from the book.



Acknowledgments

The authors would like to thank the anonymous reviewers of the third edition of *An Introduction to Theory and Reasoning in Nursing*. In their comments, they recognized the value of an introductory textbook in nursing theory and reasoning, but also made suggestions to enhance the value of the text to both undergraduate and graduate students.

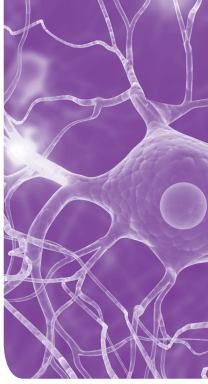
The completion of the fourth edition of the text is dependent in large part on the patience and persistence of everyone with whom we worked at Lippincott Williams & Wilkins, especially Christina Burns and Maria McAvey, as well as others who played important roles in creating the final product.

A special thanks also goes to the undergraduate and graduate nursing students at Shenandoah University who, once again, played an important role in critiquing chapters for clarity and ease of reading, offering suggestions for stories, and, most importantly, for their encouragement and support. Quite simply, students are the reason for this book.

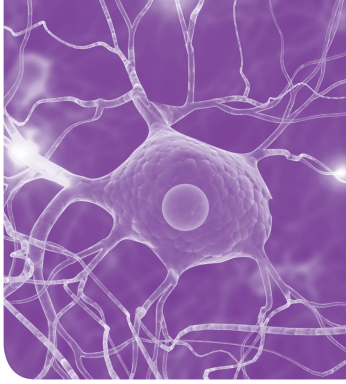
The thoughtful evaluation of chapters or parts of chapters by Dr. Bruce Leonard, Dr. Betty Wendt Mayer, Sally Thorne, and Christine Newby also helped enhance the effectiveness of this text and is greatly appreciated.

We would like to recognize the American Association of Colleges of Nursing (AACN) for providing the most current information about the Doctor of Nursing Practice (DNP).

Last, but not least, we would like to thank Margaret Wilson, Library Coordinator at the Sigma Theta Tau Virginia Henderson International Nursing Library in Indianapolis, Indiana, and Denise Blake, Health Professions Librarian at Shenandoah University, for their time and expert assistance.



Contents



1 An Introduction

Betty M. Johnson

Intent: Your everyday life is affected by theory, reasoning, and research, and this chapter will help you understand how to use them in your nursing practice.

Key Words/Concepts

acceleration	inertia	reasoning
evidence	gravity	phenomenon(a)

Chapter Outline

Introduction

As a college student, you may view courses as either theoretical or practical in nature. If you assume that theory is applicable in the classroom rather than the laboratory, you are partially correct, but you will also learn that theory is useful in the practice of nursing. A significant amount of the subject matter you study for class is based on theory and knowledge. When you ask a professor why certain things happen, he or she will rely on theory for many answers, even though the word theory may not be mentioned. Theory and knowledge provide the foundation for some of the psychomotor and **reasoning** skills you use in the laboratory and also help increase your understanding about objects, events, and relationships in patient care settings.

As you learn about theory, reasoning, and research, you will recognize that what you learn about nursing and healthcare relates to theory, although you might not be able to identify a specific theory. By the time you finish reviewing and studying this book, you will understand what theory and research are, how they support reasoning, and the relationships between theory, reasoning, and nursing practice.

Before you begin to examine theory, reasoning, and research, let's explore some familiar activities and events in everyday life. This will prepare you to consider questions about relationships between knowledge, theory, and research. By the time you reach the end of the chapter, you may begin to identify relationships between what occurs in your everyday life and your professional nursing life. Although this chapter includes little that is specifically about theory, reasoning, and research, the explanation of some common activities will help you understand these concepts for future reference.

Theory and Reasoning in Everyday Life

Theory and research are perceived by many to be abstract concepts; however, they will become more concrete when you examine their roles in everyday activities and events. You seldom hear the word theory used in conversation. For example, as a young child, you may have asked your parents why apples and leaves fall off trees. You may not have understood what they said as they explained Sir Isaac Newton's theory of **gravity,** but you learned something about its effect from their explanation. Later, when you studied Newton's theory in school, you became aware of how gravity applies to other situations as well. For example, you came to understand why it is more difficult to pedal your bicycle up a long hill compared with the ease of coasting down the hill. You may seldom think about gravity these days, but you might use your reasoning skills when you face tasks such as moving into a university residence hall or a new apartment. And you might think about it when you need to assist a patient into bed. When you see how small your dorm room is, you might get a measuring tape to collect data about the space before deciding to add a favorite chair to the room. You might not call that research, but you are using related intellectual skills.

Frequently, you use theory, research, and reasoning without realizing that you are doing so. You can drive a car, repair an electrical switch, follow a recipe, or even surf the Internet without knowing what makes the car go, how electricity causes light, why cakes rise in the oven, or how images from around the world enter your computer. You can rely on scientists to develop the technology and only concern yourself with learning how to use it.

Have you recently read or heard about discoveries in fields such as engineering, chemistry, and biology? Although reporters seldom mention theory or research associated with these discoveries, you might want to think about what it took to make the discovery. Reports about the Human Genome Project, for example, are related to scientific advances in biological and genetic theory. When scientists describe how genomes are essential to mapping out DNA, they may not explain the theory on which it is based.

You may experience a similar situation when you read or hear about breakthroughs in healthcare. Think about a recent breakthrough and try to relate the information to what you already know. You may be able to find an article in a scientific journal, and exercise your reasoning skills to make judgments about the meaning and significance of the breakthrough to you.

The following are examples of how theory, reasoning, and research are applied to everyday activities and objects, such as roller-coaster rides, college campuses, and shopping malls. As you read and think about these activities, try to draw parallels between the examples.

The Theory of the Thrill

Have you ever taken a ride on a roller coaster, with its gut-wrenching drops, disorienting speed, and upside-down loops? Videos of people riding a coaster show them screaming and crying, many with their hands up in the air in excitement. The rides may be frightening, but many riders return again and again to experience the thrill. Maybe you have wondered why riders do not fall out of the cars as they race up and down steep inclines, sometimes completely upside down. Riders wear safety harnesses and lap bars, but experts tell us that even if you are not strapped in, it is unlikely you will fall out of most coasters.

According to Wright (1997), an expert on the physics of roller coasters, two natural **phenomena,** inertia and acceleration, that are related to the theory of gravity keep you in your seat and give you the sensation of flying, tumbling through the air, and weightlessness. **Inertia** is the tendency of

an object to keep moving in the direction that it is already moving. **Acceleration** is any change in speed or direction of an object, not just an increase in speed, as we commonly define it.

Theory associated with gravity, inertia, and acceleration is evident not only in roller-coaster rides, but also when you drive a car. When you brake the car suddenly, you keep moving, even though the car slows down. Seat belts and air bags prevent you from colliding with the dashboard when the driver brakes or suddenly slows the car down, stops, or changes direction. This is similar to a roller-coaster ride, during which gravity, inertia, and acceleration keep you moving in the direction of the coaster car and give you the thrill. You might feel safer in a car, because you ride it more often, but the next time you drive or ride in a car, think about inertia and acceleration. We might wonder where the inventor of the coaster got the idea before one was built. Recently a roller coaster stopped in midair and the riders spent several hours before technicians were able to bring it down to the ground. How many riders do you think asked themselves why they had taken the ride? How many vowed they would never ride another coaster? How many got right back in one again, just to experience the thrill? In many cases, just because you are familiar with the theory behind the roller coaster does not mean that you want to experience the thrill.

The College Campus: Why Does It Look This Way?

As a student in a university or college (hereafter referred to as college), you know something about how a college campus is arranged. After arriving at college, you quickly learn your way around the campus but may wonder about the location and arrangement of specific buildings. You might wonder why the library is not closer to the residences and why classes are spread around in various buildings. What if you were asked to develop a theory for designing a college campus? Where would you start?

Architects, planners, and engineers who design college campuses depend on a specific body of knowledge about the organization and arrangement of educational institutions. They study how a college functions, how it looks, and the kind of feelings it gives to students and their parents. Although some college campuses appear to be arranged haphazardly, if you investigate, you may find that most have a master plan with a central theme that guides the growth of the institution. Following the plan ensures that a campus is convenient, attractive, and unified. The plan reflects the beliefs of various groups, such as the college governing board, administration, and faculty. In some cases, even the student body is involved. The master plan may identify sites for future buildings, such as classrooms, office buildings, and student residences, and may designate space for athletics and parking.

The next time you walk through the campus, ask yourself why the student center and the financial aid office are located where they are, why the cafeteria is not closer to the classroom buildings, and the reasoning behind the placement of parking lots. You may notice that there are similarities in the type of material used for constructing buildings, such as brick, stone, or wood, as well as other characteristics, such as the kind of windows, roofs, and entrances. If there are buildings that do not conform to the master plan, you may wish to explore the reasoning behind the differences. If you have attended classes on more than one campus, you might have different questions. Why is one campus so quiet and distinguished, while another seems lively and energetic? Why are buildings on one campus traditional in appearance and very modern on another? On larger campuses, you may notice that the appearance and feeling of the campus change as you move from one area to another. For example, what are the similarities and

differences between the health science center and the business school or the liberal arts building and the library?

Suppose you attended a small, rural college with expansive green lawns between buildings, benches along tree-lined walkways, shaded parking areas, and recreational space near student residences. After 2 years, you transfer to a large urban university located among the skyscrapers in a large metropolitan area. You may wonder whether this is really a campus, how to identify the boundaries of the campus, and whether students can learn as effectively in such an environment.

There are many types of campuses, but many have similar properties, objects, and events that distinguish it from other types of institutions, such as parks, housing subdivisions, and shopping malls. Almost every campus has buildings of classrooms, laboratories, and offices; a catalog of courses; and students, professors, and staff. There may be student and faculty residences, libraries, parking areas, a security department, and athletic facilities. Frequently, buildings of a certain type are clustered; for example, student residences may be located together and adjacent to the cafeteria. On a larger campus, there may be several areas devoted to student residences surrounding academic sections of the campus. The college library may be located centrally on the campus; however, in large institutions with numerous libraries, libraries will be located near buildings housing specific disciplines. A campus may be viewed as open to the community, accessible to the disabled, friendly or inhospitable, and spacious or crowded. As you observe your college campus or visit other campuses, you may notice that each campus has a distinct personality.

These factors and others could contribute to developing a theory for designing a college campus. If you were an architect and asked to design a college campus, what characteristics would you consider important to carry throughout the campus, and how would you improve the structure and functionality of the campus? How many campuses would you visit to collect data before you decided the most effective way to stimulate intellectual thinking? While you were exploring what college to enroll in, what helped you most in making up your mind? What reasons did you use to help choose your campus, and how did you come to your decision? If you used other characteristics than these to make your decision, ask yourself questions that might be related to research and reasoning skills. One last thought: How would you perceive the campus, if you were enrolled in a distance learning course and didn't even come to the campus?

Shopping Malls and Arranging Stock

Now shift your attention from a theory of designing college campuses to a theory of designing shopping malls. Think about the shopping malls you visit. What physical and behavioral characteristics do they display? How are they similar to or different from each other? What characteristics, if any, do they share with college campuses? What purposes do shopping malls serve other than selling merchandise and food? How are these purposes guided by theory? If you moved from another city to attend college, what did you look for in a shopping mall, if you just wanted to "hang out"?

Basic premises used in building shopping malls include recruiting several large well-known department stores, locating them at strategic points within the mall, and then filling the areas between them with a variety of specialty shops. What is the value of using this plan? What research would be helpful in planning? Why are the larger stores placed in strategic areas? Is there a reason for the arrangement of the smaller stores? How do the arrangements and characteristics of a mall reflect what people value, such as convenient parking, protected walkways, food courts, and a

play area for children? If you have visited shopping malls in various parts of the country, have you noticed any differences between malls?

You are probably familiar with today's large enclosed malls, but earlier malls, known as strip malls, are still evident in some neighborhoods. Strip malls are composed of a group of stores along one or more blocks, sometimes on both sides of the street, and away from the center of the city. In some, parking is limited to the space in front of the store. Although we still have strip malls, what events stimulated the development of the large indoor malls that are so popular? How do large regional discount malls resemble and differ from the neighborhood malls? What characteristics do all malls have in common?

The next time you are in a large shopping mall or a small strip mall, observe the events, objects, and climate of the mall, including activities sponsored by the mall and characteristics of the shoppers. Notice things you expect to see there, but also look for unusual things as well. Think about the theory and reasoning that went into the planning, development, and building of the mall. Also think about the addition of dental offices, urgent care units, and other services that might be added to shopping malls in the future.

While you are exploring theory in everyday life, begin to think about how theory might be used in nursing practice. Start with simple, concrete ideas, and then proceed to ideas that are more complex and abstract.

Summary

You now know how theory, research, and reasoning are related to common events, objects, and relationships in your everyday life. Theory, research, and reasoning apply to your nursing education and practice as well. This book will help you recognize, understand, and use theory, research, and reasoning in your daily nursing practice. If your ideas about theory, research, and reasoning become a little blurred, regain your perspective by returning to the theoretical world of roller coasters, campuses, and shopping malls.

Learning Activities

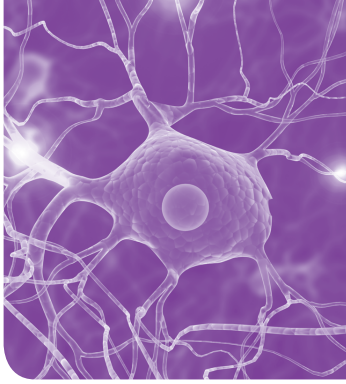
1. Nurses are increasingly interested in **evidence** that supports their practice. The Agency for Healthcare Research and Quality, part of the U.S. Department of Health and Human Services, published a book early in 2008 targeting nurses, especially in schools of nursing (Hughes, 2008). Nurses can obtain the book without cost through the agency. Since the book has 90 authors and 900 pages, you may wish to look at it section by section on the Internet. To get you started, you might examine Section I: Patient Safety and Quality, specifically the section on Clinical Reasoning, Decision Making and Action: Thinking Critically and Clinically, by Patricia E. Benner, Molly Sutphen, and Rhonda Hughes.
2. PubMed is another site that focuses on healthcare, but this one is primarily for the physician. As you look at this Internet site, you may begin by making comparisons between Hughes (2008) and PubMed.

References

Hughes, R. G. (2008). *Patient safety and quality: An evidence based handbook for nurses*. Washington, DC: Agency for Healthcare Research and Quality. Retrieved from www.ahrq.gov

PubMed. (n.d.). Retrieved from www.nchi.nlmc.nih.gov/pubmed

Wright, D. (1997, August 13). *The theory behind the thrill. Washington Post*, pp. H1, H4.



2

Language, Meanings, Structure, and Relationships

Pamela B. Webber

Intent: This chapter introduces you to specific words and meanings that are considered fundamental building blocks of theory, research, and reasoning. It also describes how these words and meanings are progressively structured to support nursing practice.

Key Words/Concepts

Assumption
confounding variable
concept
conceptual definition
construct
dependent variable
discipline-specific theory
epistemology
established theory
fact
grand theory
hermeneutics
hypothesis
idea
independent variable
knowledge
law
logical adequacy
meanings
metaparadigm
metatheory
middle-range theory
model
operational definition
paradigm
phenomenon(a)
philosophy
principle
proposition
qualitative
quantitative
reasoning
research
speculative theory
theory
triangulation
variable

Chapter Outline

Introduction

Before you begin to study theory, research, and reasoning, it is important that you understand the common language (words and meanings) they share. Simply memorizing definitions of words is not sufficient. To be able to use these words effectively in practice, it is important that you understand how their meanings continually evolve and provide us with usable knowledge and the reasoning tools to use it.

The study of words and **meanings** dates back to the days of Greek mythology and Hermes, the messenger of the gods. Hermes was charged with interpreting messages from Zeus and the other gods in such a way that the mortals on Earth understood them. Today, it is this mythology that gives rise to **hermeneutics** (her·me·nu·tiks), which is the science of interpreting words and their evolving meanings. Hermeneutics allows us to understand and use expanded meanings of words in different situations and combinations. This expandability in establishing meaning is an important tool because it enhances your ability to grow and develop enhanced language and reasoning skill, while ensuring that the words remain rooted in their original meaning. For example, as a child, you learned words and meanings associated with counting from one (1) to ten (10). As an adult, you build on these basic meanings when using math to manage your finances. As a nursing student, you use these basic meanings when learning to calculate drug dosages and intravenous fluid drip rates. Even mathematicians capable of solving complex formulas have to use these basic words and meanings to do higher-level work. In other words, basic words and meanings associated with counting from 1 to 10 provide the foundation, which is then expanded based on your need and capability.

Most people assign meanings to words based on how those words are used within their families, schools, cultures, societies, and experiences. For instance, toddlers learn the word hot; however, they do not understand the meaning of hot until they touch something hot, such as an oven, and begin to associate the word hot with that feeling and their mothers yelling, "No! Hot!" Over time, the word hot takes on expanded meaning by being associated with other words that enhance the context of the meaning. Examples of the expanded meaning of hot include the description of the temperature outside, a hot day; a fast car, a hot rod; and a type of social dating, a hot date. Nurses also use this expanded meaning when describing a patient's elevated temperature, hot with fever. Hence, the word hot has taken on expanded meanings and broader applications when used as a phrase as opposed to a single word. In addition to expanding the meaning of hot by using it in these contexts, its use in combination with other words, such as hot day, hot rod, hot date, and hot with fever, creates new, shared meanings that are larger than the meanings of the two separate words. Although meanings and relationships among these words vary somewhat from the original, they still have commonalities with their root words and meanings. It is the root commonalities of words and their meanings that help us remember and use the words appropriately, and ultimately build new or expanded meanings. Perhaps the old adage about the whole being greater than the sum of its parts applies to meanings created by expanding and combining words. The words and meanings associated with theory, research, and reasoning are expanded in much the same way.

Theory, Knowledge, Research, and Reasoning: What Are They and Why Are They Important?

Theory

The word **theory** is an excellent example of how a word and its meaning can be expanded over time. The word theory originates from the Greek word *theoria*, which means to speculate; however, the meaning of theory has evolved to also mean organized information that is intended to

answer questions, solve problems, explain phenomena, and generate new theory. If you combine these two meanings, then you could safely assume that the word theory involves explanations based on speculation. For example, scientists speculate that a large meteor hit the Earth and caused the extinction of the dinosaurs. They do not know this for a fact, but continue to search for clues that would confirm or deny this **speculative theory**. Over time, the meaning of theory has continued to expand beyond explanation through speculation to include explanation based on facts, principles, and laws that have been generated through research. Theory based on facts, principles, and laws is referred to as **established theory**.

Established Theory

Established theory represents the collective culmination of facts, principles, and laws that nurses use when answering questions, solving problems, explaining phenomena, and generating new theory. Established theory provides valid and reliable information that has been derived from replicated research and/or determination of its **logical adequacy** over time. This type of theory is used to predict possible patient care outcomes. For example, biological theory has told us that postoperative patients who ambulate after surgery develop fewer postoperative complications than those who do not. Consequently, a common nursing practice is to ambulate patients as soon after surgery as possible and regularly thereafter. If these patients do not ambulate, then we can predict that they may develop postoperative complications such as pneumonia, atelectasis, or deep vein thrombus with resulting pulmonary emboli.

You select and interpret the meaning of established theory based on your knowledge, skill, values, meanings, and experiences, and use this interpreted meaning when answering questions, solving problems, exploring phenomena, and generating new theory. For example, as a first-year nursing student, you learn the facts, principles, and laws of chemistry. As a second-year student, the meaning and significance of these facts, principles, and laws begin to expand as you apply them to the study of pharmacology. By the time you are a third- or fourth-year student and are administering potentially lethal intravenous medications, the meaning and significance of the facts, principles, and laws of chemistry as applied to nursing have expanded dramatically. If you become a nurse practitioner, then you will prescribe these potentially lethal drugs and will participate in clinical research trials to test the effectiveness and safety of new drugs, both of which require knowledge of basic chemistry. **It is the continued safe and effective application of established theory in practice that provides ongoing evidence of its validity, reliability, and predictability.**

For the past decade, organizations such as the Institute of Medicine (2008, 2013), the Robert Wood Johnson Foundation (Thorpe & Casico, 2013), and the Agency for Healthcare Quality and Research (2012) have been working to improve patient safety. One of the outcomes of this work was the development of an initiative called Quality and Safety Education for Nurses (QSEN; Hunt, 2012). QSEN identified patient safety as one of six essential competencies needed by nurses. The use of established theory to support your nursing practice improves patient safety because of its reliability and validity.

Nursing Story 2.1 demonstrates how established theory and expanded meanings can be used in a nursing situation.

Speculative Theory

Speculative theory is theory that has not been evaluated through logical adequacy or adequately tested through research. This meaning has been expanded over time to include organized and established information, which gives us a dualistic, yet highly functional, way of looking at the meaning of theory.

Building blocks associated with speculative theory are the same as for established theory—up to a point. Speculative theory consists of concepts/variables, propositions, assumptions, and, hopefully at some point, a researchable question or hypothesis.